

## A new record of *Spergularia marina* (Caryophyllaceae) from southern Poland

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**Abstract:** *Spergularia marina*, a rare native halophyte and nationally vulnerable species, is reported from a new locality in southern Poland. It was found on 14 September 2016 in Mogilany, Lesser Poland Voivodeship, growing between paving stones at the Zakopianka road. Map of distribution of *S. marina* in Poland based on the ATPOL cartogram method is provided, and its possible pathways of introduction are discussed.

**Key words:** anthropogenic habitat, distribution, halophyte, red-listed species

### Introduction

*Spergularia marina* (L.) Griseb, an annual plant of the family Caryophyllaceae, is native to Europe, North Africa, Asia, Australia and North America (Dequan & Rabeler 2001, Kavak 2014). It has been introduced to South America where is naturalized in Chile and Uruguay (Randall 2012 and literature cited therein). As an obligatory halophyte, it thrives on soils of variable but generally high salinity. It occurs in marine marshes and inland salt pans, being a species characteristic of the salt-marsh community of *Spergularia marina-Puccinellia distans* (Rodwell 1991, Matuszkiewicz 2008). Interestingly, it has been documented that *S. marina* can invade roadsides which were salt-treated to melt snow and ice on roads in winter (Scott & Davison 1982). From a global point of view, *S. marina* is considered as the least concern species (Kavak 2014).

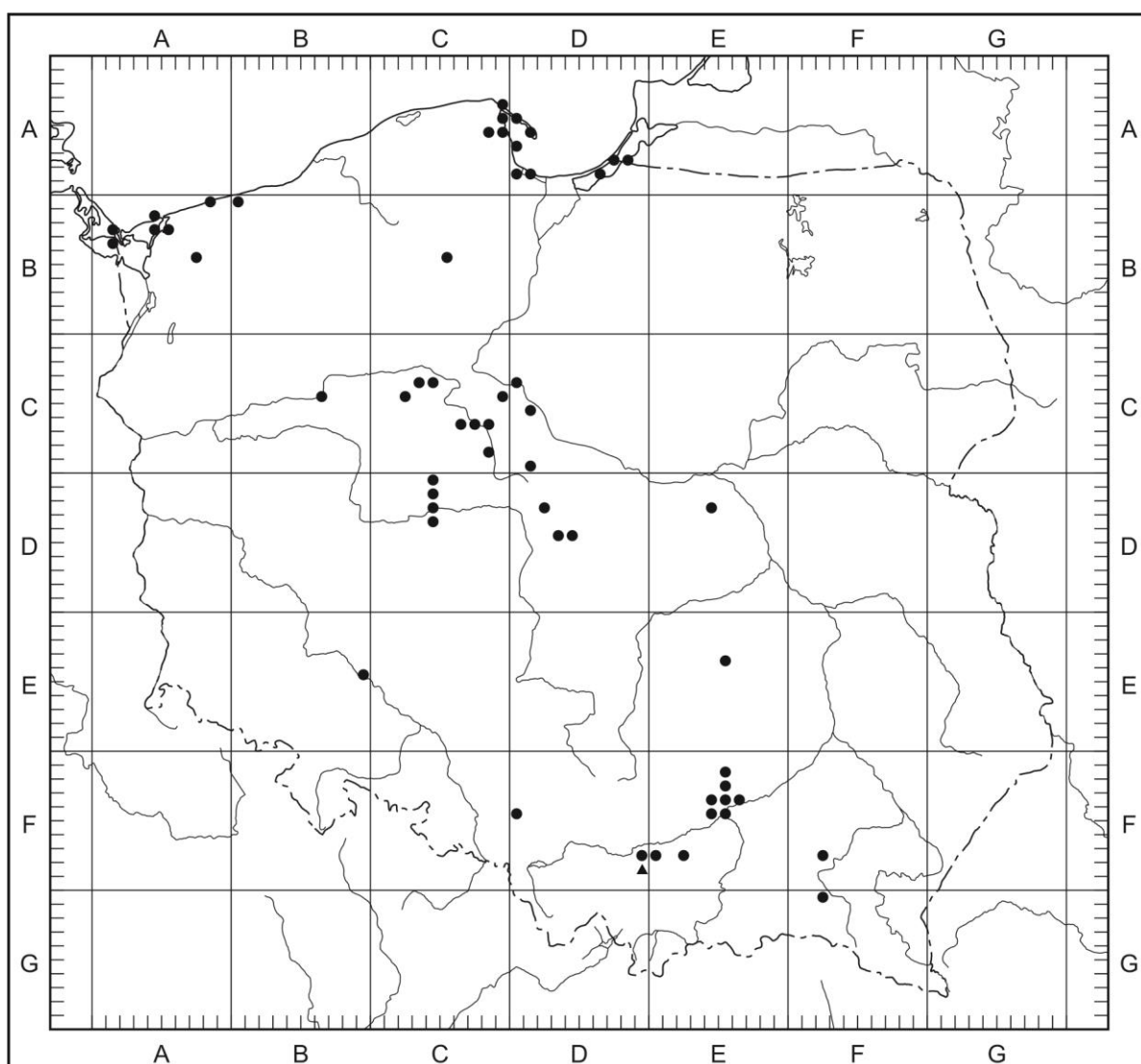
In Poland, *S. marina* is a rare native species known from several dozen localities in the north-western, central and southern parts of the country (Zajac & Zajac 2001). Its natural stands are restricted to marine and inland salt pans which are distributed along the Baltic Sea shore (Szczecin Lagoon, Bay of Pomerania, Bay of Puck, Bay of Gdańsk), in Kuyavia, Nida Basin and near Wieliczka (Ceynowa-Gieldon 1993, Zajac & Zajac 2001). It has been also recorded from anthropogenic habitats such as roadsides, waste dumps and ruderal ground, and its synanthropic stands are known, for example, from Kuyavia, Central Masovian Lowland and Małopolska Upland (Ceynowa-Gieldon 1994, Zajac & Zajac 2001, Nobis 2007). Moreover, due to its restricted area of occupancy, *S. marina* is treated as a nationally vulnerable species (Kaźmierczakowa *et al.* 2016). This paper presents a new record of *S. marina* from southern Poland.

### Material and methods

*Spergularia marina* was identified based on morphological characters provided by Rutkowski (2004). Map of distribution was prepared using the ATPOL cartogram method (Zajac 1978), where the basic unit is a square of 10 km side. Occurrence records were obtained from the ATPOL database. Voucher specimens of *S. marina* are deposited in the Herbarium of the Institute of Botany of the Jagiellonian University in Kraków (KRA).

## Results and discussion

A new locality of *Spergularia marina* was discovered on 14 September 2016 in Mogilany, Lesser Poland Voivodeship, southern Poland (GPS coordinates: 49°55.485'N/19°52.974'E, altitude: 260 m a.s.l.). The locality is situated within the unit DF89 of the ATPOL cartogram grid (Fig. 1). About 50 mature individuals of *S. marina* were found growing between paving stones at the Zakopianka road and associated with a few ruderal plant species, namely *Atriplex prostrata* Boucher ex DC., *Chenopodium glaucum* L., *Digitaria ischaemum* (Schreb.) H. L. Mühl., *Eragrostis minor* Host, *Lepidium ruderae* L. and *Polygonum aviculare* L. Two possible pathways of introduction of *S. marina* can be considered. Presumably, seeds of *S. marina* were introduced to Mogilany by road transport or were transported as a contaminant of salt, which was used to melt the snow and ice on the Zakopianka road in winter. Such pathways of introduction were discussed by Scott & Davison (1982) who observed the invasion of maritime plants (including *S. marina*) on road verges in the United Kingdom. It should be mentioned that *S. marina* is an alien plant in the local flora of Mogilany, and its nearest native stands are located near Wieliczka, Lesser Poland Voivodeship. The further spread of *S. marina* along salt-treated roads in Poland needs to be studied.



**Fig 1:** Distribution map of *Spergularia marina* in Poland (● – known localities; ▲ – new locality).

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